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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,147	07/08/2003	David W. Abraham	YOR920010260US2	8233

7590 02/15/2007
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EXAMINER

LE, THONG QUOC

ART UNIT PAPER NUMBER

2827

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/15/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/615,147

Applicant(s)

ABRAHAM ET AL.

Examiner

Thong Q. Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-24, 26-33, 35-49 and 51-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-24, 26, 29-33, 35-36, 38-49, 51-60 is/are rejected.
- 7) ☒ Claim(s) 27, 28 and 37 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Amendment filed on 12/07/2006 has been entered.
2. Claims 21-24,26-33,35-49,51-60 are presented for examination.

Response to Arguments

3. Applicant's arguments with respect to claims 21-24,26-33,35-49,51-60 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

4. Claim 26 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 25 has been canceled.
5. Claims 35-36 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 34 has been canceled.

Specification

6. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Regarding dependent claims, line 1 should be change "A" to –The--.

Applicant is requested to correct any errors in the claims and the name of elements should be used the same as they defined.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 23-24,26,35-36 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: these claims dependent from canceled claims.

9. Claims 49, 51-56 recites the limitation "The device" in line 1. There is insufficient antecedent basis for this limitation in the claim.

There are two of device elements in claim 48.

10. Claim 21-24, 26-33,35-47 provide for the use of a method for writing, but, since the claim does not set forth any steps involved in the method/process, **it is unclear what method/process applicant is intending to encompass**. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 21-24,26-33, 35-37 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a

proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

12. Claims 21-24,26,29-33,35-36,38-49,51-60 are rejected under 35 U.S.C. 102(e) as being anticipated by Ayata et al. (U.S. Patent No. 6,139,126).

Regarding claims 21, 29, Ayata et al. disclose a method for writing to a memory storage device (Column 20, lines 27-30) comprising:

a) providing a storage cell (Figure 6A) comprising a changeable magnetic region (Figure 6A, L), said changeable magnetic region comprising a material having a

magnetization state that is responsive to a change in temperature thereof (Column 20, lines 15-20, magnetic memory); and

b) heating an element (Figure 6A, H) said storage cell for selectively changing the temperature of said changeable magnetic region of said storage cell.

c) said heating said element is provided by passing an electric current therethrough (Column 7, lines 25-45, Column 26, lines 33-46).

Regarding claim 22, Ayata et al. disclose wherein the storage cell comprises a magnetic tunnel junction (Column 20, lines 19, magnetic memories).

Regarding claims 30, 39-40, Ayata et al. disclose a method for writing to a memory storage device comprising a memory array comprising two or more memory storage devices, said method comprising

a) providing a storage cell having a bit line and word line associated therewith, said storage cell comprising a changeable magnetic region, said changeable magnetic region comprising a material having a magnetization state that is responsive to a change in temperature thereof (Column 20, lines 10-23); and

b) heating an element (Figure 6A, H) said storage cell for selectively changing the temperature of said changeable magnetic region of said storage cell.

c) said heating said element is provided by passing an electric current therethrough (Column 7, lines 25-45, Column 26, lines 33-46).

Regarding claims 41-42, Ayata et al. disclose a method of writing to a magnetic memory element of an array of magnetic memory elements, the method comprising: heating the memory element wherein the memory element is heated by passing a

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current through a conductor; and applying at least one magnetic field to the memory element (Column 11, lines 64-67, Column 17 lines 42-50, Column 20, lines 25-53), and wherein the heat and at least one magnetic field are applied to the memory element simultaneously (Column 6, lines 4-11, Column 8, lines 35-37).

Regarding claims 31-33,38, 43-47,48-49, 51-57, 58-60, Ayata et al. disclose an information storage device (ABSTRACT, Column 2, lines 48-53) comprising an array of magnetic memory elements (Column 2, lines 49-52, Column 3, lines 1-13, Column 20, lines 15-20) and a plurality of heating elements for memory elements (Column 2, lines 62-67), the heating elements are included in the device extending across the array (Figure 6A, H1-H3, Figure 35, IJM, Column 20, line 49), and wherein the heating elements are conductors (Figure 1, H1, Figure 6A, H1-H3), and wherein each heating elements includes conductors providing the heating elements (Figures 5-6A, H1-H7, Column 7, lines 26-65, Column 17, lines 66-67, Column 18, lines 15), and wherein the heating lines extend diagonally across the array (Figure 6A), and wherein the heating elements raise the temperature of selected memory elements by about 5C degree to 10C degree above a compensation temperature (Figures 3, Column 6, lines 2-36), and wherein the heating elements raise the temperature of selected memory elements (Column 8, lines 8-45, lines 55-65, Column 9, lines 1-39), and comprising first means for generating magnetic fields for switching selected memory elements (Figure 8, 22, Column 16, lines 22-34); and second means (Figure 8, 27) for causing the heating elements to apply heat to the selected memory elements while or before the magnetic fields are being applied (Column 8, lines 30-65, Figure 35, CC).

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 48-49, 51 are rejected under 35 U.S.C. 102(b) as being anticipated by D.M. CHANBERLAIN ETAL (U.S. Patent No. 3,237,173).

Regarding claims 48-49, 51, D.M. Chanberlain etal discloses an information storage device (Figure 1, Column 1, lines 67-21) comprising an array of magnetic memory elements (Figure 1, 10) ; and a plurality of heating elements (Figure 1, 12, Figure 3, 32) for memory elements, the heating elements are included in the devices extending across the array (Figure 1, 12-heater across array), and wherein the heating elements are conductors (Column 2, lines 9-11), and wherein each heating elements includes conductors providing the heating elements (Column 2, lines 1-13).

Allowable Subject Matter

14. Claims 27-28, 37 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

15. Claims 27-28, 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 27-28, 37 include allowable subject matter since the prior art made of record and considered pertinent to the applicant's disclosure does not teach or suggest the claimed limitations. Ayata et al. (U.S. Patent No. 6,139,126), and others, does not

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teach the claimed invention having wherein the material having a magnetization state that is response to the change in temperature thereof comprises a ferromagnetic material.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Le whose telephone number is 571-272-1783. The examiner can normally be reached on 8:00am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarabian Amir can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thong Q. Le
Primary Examiner
Art Unit 2827



11/21/2006